

OPTICAL SPECTROMETER AND METHOD FOR
COMBUSTION FLAME TEMPERATURE DETERMINATION

ABSTRACT

5 A solid state optical spectrometer for combustion flame
temperature determination comprises: a first photodiode device for obtaining a
first photodiode signal, the first photodiode device comprising a silicon
carbide photodiode and having a range of optical responsivity within an OH
band; a second photodiode device for obtaining a second photodiode signal,
10 the second photodiode device comprising a silicon carbide photodiode and a
filter, the second photodiode device having a range of optical responsivity in a
different and overlapping portion of the OH band than the first photodiode
device; and a computer for obtaining a ratio using the first and second
photodiode signals and using the ratio to determine the combustion flame
15 temperature.